

CALIFORNIA'S DEFINITION FOR TITLE 21'S 32-BIT TRANSPONDER ID NUMBER FIELD

In the State of California, the 32-bit Transponder ID Number Field specified in the Title 21 standard has been further subdivided into three data fields to represent Tag Type, Facility Code, and Internal Tag ID. These fields are currently defined as follows:

| 32-bit Transponder ID Number Field | | |
|------------------------------------|-----------------------------|-------------------------------|
| <i>TAG TYPE</i> | <i>FACILITY CODE</i> | <i>INTERNAL TAG ID</i> |
| 4 Bits | 18 Bits | 10 Bits |
| 16 Possibilities | 262,144 Possibilities | 1,024 Possibilities |
| Most Significant Bit | | Least Significant Bit |

Tag Type

A 4-bit field currently established to uniquely differentiate California's transponders from transponders that originate from agencies external to the state. In the future the unassigned bits could be used to recommend a unique North American agency numbering scheme, or to further describe the operational behavior of the transponder. The 4-bit field is defined in decimal notation as follows:

0- California SOV.
2- Existing Out of State
4- California HOV2
8- California HOV3+

1, 3, 9-15 - Unassigned. Available for a future use.

Facility Code

An 18-bit field used to identify the facility or entity conducting business. Facility Code ranges are assigned based upon the number of transponders that are projected to be utilized. The 18-bit field is defined in decimal notation as shown in the two tables below. Table 1 is for non-switchable transponder tags and Table 2 is for switchable transponder tags:

Table 1

| Non Switchable Transponder Tags Facility Codes (Tag Type 0) | | |
|--|--------------------------------|----------------------------|
| <i>Agency</i> | <i>Facility Codes Assigned</i> | <i>No. of Transponders</i> |
| State of California | 0 – 75,000 | 76,801,024 |
| Facility Codes 75,001 thru 125,000 are reserved for Switchable Transponder Tags. See Table 2 below | | |
| Sacramento County Dept. of Airports | 125,001 – 125,020 | 20,480 |
| TCA | 129,314 – 132,092 | 2,845,696 |
| TCA (Pilot Project) | 132,093 – 132,094 | 2,048 |
| SR-91 | 132,096 – 132,990 | 916,480 |
| SANDAG I-15 | 132,992 – 133,001 | 10,240 |
| Golden Gate Bridge | 133,015 – 133,407 | 402,432 |
| SANDAG/SBX | 134,583 – 134,876 | 301,056 |
| Port of Oakland | 140,000 – 140,001 | 2,048 |
| LA World Airports | 141,000 – 141,052 | 54,272 |
| BATA | 145,000 – 148,928 | 4,023,296 |
| SENTRI | 184,876 – 185,022 | 150,528 |
| TCA (Multiprotocol Tags) | 186,000 – 186,500 | 513,024 |
| SANDAG I-15 | 258,960 – 259,100 | 144,384 |
| Caltrans ATCAS | 260,096 – 262,136 | 2,089,948 |

Table 2

| Switchable Transponder Tags Facility Codes (Tag Types 0,4,8)* | | |
|--|--------------------------------|----------------------------|
| <i>Agency</i> | <i>Facility Codes Assigned</i> | <i>No. of Transponders</i> |
| LA MTA | 75,001 – 76,955 | 2,001,920 |
| TCA | 80,000 – 80,781 | 800,768 |
| SR-91 | 81,000 – 81,366 | 375,808 |
| SANDAG/SBX | 83,000 – 83,009 | 10,240 |
| BATA | 90,000 – 93,907 | 4,001,792 |
| | | |

*NOTE: Switchable Transponder Tags have Facility Code range from 75,001 to 125,000.

Indicates change from previous document version

Internal Tag ID

A 10-bit field used to refer to the unique identification numbers that belong to an assigned Facility Code. For each Facility Code, a block of 1,024 Internal Tag IDs will be assigned within the Transponder ID Number Field. Assignment of the Internal Tag ID's is the responsibility of the Facility Code Agency.

TITLE 21 AGENCIES OUT-OF-STATE:

Since the Title 21 standard is an open specification there are other agencies outside of California that can also use interoperable transponders. These external agencies could inadvertently duplicate California's transponder ID number field assignments and render them non-unique.

Following is a listing of out-of-state Title 21 agencies that have contacted the California Department of Transportation to participate in California's unique definition for the 32-bit Transponder ID Number field. Please note that this listing does not insure that the assignments are unique as they may have been duplicated by another agency outside of California.

| 32-bit Transponder ID Number Field Definition for Title 21 Agencies Out-of-state | | | |
|---|-----------------|--------------------------------|----------------------------|
| <i>Agency</i> | <i>Tag Type</i> | <i>Facility Codes Assigned</i> | <i>No. of Transponders</i> |
| Colorado E-470 Public Highway Authority | 2 | 0 – 9,766 | 10,001,408 |
| Denver International Airport | 2 | 10,000 - 10, 029 | 30,720 |
| Golden Ears Bridge Group Vancouver, Canada | 2 | 15,000 – 16,000 | 1,025,024 |